

REMARKS

Applicant affirms that a provisional election was made with traverse to prosecute the invention of Group I, claims 1 and 2.¹

The Examiner has rejected claims 1 and 2 as being unpatentable over Moller (WO 96/01304) in view of Benoit et al. (U.S. 6,087,003). In rejecting the claims, the Examiner characterized the process of claims 1 as comprising the steps of:

- (A) providing a polymer solution of at least one polymer and at least one solvent,
- (B) metering hydrogen gas and an hydrogenation catalyst solution into the polymer solution to create a reaction mixture,
- (C) pressurizing and heating the reaction mixture such that the contents of the reaction mixture exists in the supercritical phase, and
- (D) hydrogenating the at least one polymer while the contents of the reaction mixture are in the supercritical phase.

The Examiner applies the cited prior art to this "summary of claim 1." Claim 2 is not specifically addressed. Particularly, the Examiner did not separately address claim 2 and its "determining" step. In the present response, Applicant has amended both claims 1 and 2 by adding a polymerizing step to claim 1 and by adding more particular limitations on the determining step in claim 2. These amendments provide claims that are distinguishable from the art of record.

Claim 1 now claims a process for the production of a hydrogenated polymer wherein monomer is polymerized in a polymerization reactor to create an unsaturated polymer cement. Due to the heat of polymerization, the polymer cement has a polymerization temperature that is above ambient temperature. The increased temperature of the polymer cement is beneficially employed by metering the unsaturated polymer cement removed from the polymerization reactor to the hydrogenation reactor, where supercritical conditions are established. Because the

¹ Applicant notes that the Office Action properly indicates that a provisional election was made to prosecute the invention of Group I, claims 3-4, but improperly indicates that Group I included. The Office Action further indicates that claims 1-2 were withdrawn from further consideration. In light of the fact that claims 1 and 2 were the claims that the Examiner examined in the Detailed Action, it is apparent that the Examiner made a minor typographical error at paragraph 4 of the Office Action.

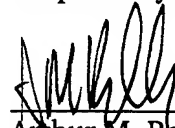
polymer cement is already hot due to the heat of polymerization, less heat must be added to the system at the hydrogenation reactor to reach supercritical conditions. Thus, less energy must be added to the system, advantageously reducing the cost of the process. The cited art does not teach or suggest polymerizing monomer in a polymerization reactor and beneficially taking advantage of the heat of polymerization, as currently claimed. Claim 1 should therefore be allowable over the prior art.

In claim 2, two processes are provided for determining the critical temperature and critical pressure for a mixture of hydrogen, at least one polymer, and at least one appropriate solvent for the at least one polymer. The different processes for determining the critical conditions are listed as a Markush group. Neither Moller nor Benoit disclose methods for determining supercritical conditions. Rather, they simply state that the components of their reactions are brought to the supercritical phase, without explaining how appropriate temperatures and pressures may be determined. Claim 2 thus includes a process step that is neither taught nor suggested in the cited references, and claim 2 should be allowed.

In light of the foregoing, Applicant respectfully requests consideration of the pending claims, and a Notice of Allowance is earnestly solicited. Should the Examiner care to discuss any of the foregoing in greater detail, the undersigned attorney would welcome a telephone call.

Despite the addition of new claims 5 and 6, the total claim count is still below the total number of claims that can be filed without extra claims fees. Nonetheless, in the event that a fee required for the filing of this document is missing or insufficient, the undersigned attorney hereby authorizes the Commissioner to charge payment of any fees associated with this communication or to credit any overpayment to Deposit Account No. 06-0925.

Respectfully submitted,



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